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EDITORIAL



"SHOULD WE HOLD A REGION III. CONGRESS?"

Time is marching on, things are changing in the world and what was not wanted yesterday may be sorely needed today; thus has life on earth progressed down through the ages.

In the realm of Communications, things are changing too. Agreements at International Telecommunications Conferences—long since ratified—are slowly being implemented. But so slow is the progress that, in between times, new services are springing into being; services that require a frequency allocation in the already grossly overloaded communications channels.

Almost monthly in contemporary journals overseas appears reports of the outcry of the Amateur services against the encroachment by communication services into the Amateur bands, on the one hand; and on the other hand refusal by other services to remove existing transmitters from the very bands agreed to at the last I.T.U. to be maintained expressly for the Amateur services on a world wide basis.

Now, what can the Amateur do against this international spathy? Individually, probably little or nothing. Collectively, as an organised body, quite a lot! At least a stoic effort can be made to preserve what once was the Amateurs' "private property," but what today is a mere shell of what the Amateur owned in the 1920's.

There are two major objectives which could be sought, both of which necessitate a lot of hard work and organisation, and a tenacity of purpose that would brook no interference from disruptive or non co-operative external forces:—

(a) An International Congress in Region III, and

(b) Direct representation supporting the stronger northern hemisphere Amateur delegations at the next International Telecommunications Conference.

To implement a Congress for Region III, whilst being a formidable task, would be far from insurmountable. A lot of work and organisation, yes—but worth every minute if it results in a cohesion of Region III. Societies to finance a delegation or representative to the next I.T.C. as a "fighting force" for the preservation of the Amateur frequency allocations.

And if a Region III. Congress can be organised, then why not hold it in 1958 during the Olympic Games when so many will be travelling to Australia from other countries—some of whom could be Amateurs.

As the third largest Amateur Society in the world, the W.I.A. must lead the way. The Radio Society of Great Britain held the first International Amateur Radio Union Conference at Lausanne, Switzerland, during May this year. The most important outcome was the establishment of a fund to enable the Societies in Region I. to send a delegation to the next I.T.U. Administrative Conference.

In the Southern Hemisphere little, but talk, has been accomplished. It is time Region III. sat up and took some notice. What do you—the member—have to say?

FEDERAL EXECUTIVE.

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The New Look in Frequency Modulation

PART TWO—THE RECEIVER

BY JOHN MILLER,* VK2ANF

PROBABLY the biggest stumbling block to the use of f.m. has been the complexity of both design and adjustment of f.m. receivers. Most of us have a fairly good a.m. receiver in the shack, but even mediocre f.m. receivers are rare enough to be objects of curiosity, so that reception of f.m. signals has been almost entirely of the normal a.m. receivers—which is hardly to be considered a fair test of the effectiveness of any f.m. system!

Some a.m. receivers give excellent results on fairly wide deviation, whilst others give fair results on narrow band f.m. when using a crystal filter. Another method is to tune the f.m. signal into the null, switch on the b.f.o. and adjust it to exact zero beat, as for single side-band reception. The latter method is probably the best system for use with an a.m. receiver. However, none of these methods takes advantage of the most outstanding improvement which may be accomplished by the use of f.m., viz., the noise reducing qualities of a detector which is not sensitive to amplitude variations.

Discriminators of various types make full use of this advantage and all forms of noise are reduced to a minimum. Noise is almost entirely evident as amplitude modulation on the received carrier, the percentage of modulation being a function of the relative strengths of the noise and the signal. Thus when the signal is weak, noise modulation exceeds the voice modulation depth and consequently readability suffers to the point where it is lost altogether. Various types of audio peak limiters are in use and they assist to a large extent by reducing the peak noise amplitude to a value no greater than the peak carrier amplitude under modulation. Note that it is not possible to limit the peak noise amplitude to the average c.w. carrier amplitude, as this would remove also the positive audio peaks which are up to twice the amplitude of the carrier. This would not only produce severe distortion, but also remove the most important component of modulation. Under weak signal conditions, most of the negative audio modulating swing is lost as it takes the carrier level below the noise level, but by also removing the positive swing, most of the audio would be lost. Thus audio limiters, "noise limiters," have a definite limitation on a.m.

With frequency modulation however, the carrier amplitude does not vary so that it is possible to limit to the point where carrier amplitude variations and consequently noise modulation, are completely removed. It is not necessary to stop at limiting only to the same amplitude as the carrier; it may be carried past this point so that limiting takes place at a small fraction of the total carrier level. Under such conditions chopping the carrier level from say 10 microvolts to 1 microvolt can be made to produce no change at all in the signal fed to the detector. Thus, not only noise

Last month's article dealt with a simple but effective method of obtaining frequency modulation or phase modulation of a transmitter; this month a simple method of receiving f.m. will be described.

but also severe fading has no effect. The S meter may do a merry dance, but the audio signal remains constant in level. It should be understood that such severe limiting does not deteriorate the signal to noise ratio, in fact it considerably improves it.

These advantages are not realised when using an a.m. receiver to receive f.m., so that even under ideal conditions the f.m. signal can give no better results than an a.m. signal. However, by taking advantage of the noise reducing capabilities of an f.m. receiver, considerably better results may be obtained, both on fairly strong signals and weak signals, comparable in strength to the noise present. A further point is that ordinary amplitude limiters, as used in a.m. receivers, only act to any extent on noise of a pulsed character, e.g. ignition noise, whilst receiver noise and similar continuous types are not reduced at all. A limiter as used in f.m. receivers also reduces this form of noise.

It is important to realise the significance of the various classifications of f.m. Wide band f.m. as used for commercial broadcasting in the United States is most unsuitable for normal communication purposes, as, spreading the available carrier power over a wide band up to 150 Kc. causes a large reduction in signal to noise ratio. What is called narrow band f.m. in the commercial world is much more suitable for communication purposes as it restricts the bandwidth to 30 Kc. Even so, a receiver having a 30 Kc. bandwidth must be classified as a noisy receiver when compared to a.m. communication receivers having a bandwidth of perhaps down to 6 Kc. for normal phone work. Very narrow band f.m. as used by Amateurs has the distinct advantage of a very much improved signal to noise ratio before the signal ever gets to the detector and then, the use of a detector insensitive to amplitude variations adds the advantages already dealt with. There is no need to stop at 6 Kc.; the bandwidth may be further reduced with a gain in signal to noise ratio. With a.m. this reduces the higher audio frequencies as the bandwidth is progressively reduced, making the signal difficult to copy, but with f.m. a reduction in deviation does not have this effect and the full audio signal is retained, thus giving a further advantage over a.m.

It is true that the pulse noise rejection capabilities of an f.m. receiver decline as the bandwidth is reduced, but in practice this does not detract from the advantages to be obtained, to any extent worth worrying about.

To convert an a.m. receiver for reception of f.m. signals is very simple and it may be accomplished by the addition of a discriminator as an out-board unit or it may be built in to the receiver. Both the Foster Seely and the Ratio detectors have been used by Amateurs but they have the disadvantage of using a special type of transformer and further, require very careful alignment for which a vacuum tube voltmeter is a must. Further, unless temperature compensated, both of these detectors are prone to gradually fall out of balance, whereupon their operation is considerably affected. Transformers (phase discriminators) of the so-called narrow band variety have been and may still be available, but they are not suitable for the 3 Kc. deviation used by Amateurs. They are designed for use with 15 Kc. deviation (30 Kc. bandwidth) "narrow band" systems and their use for the very narrow band f.m. as used by Amateurs results in a very great drop in recovered audio, making them completely useless for the reception of weak signals. In fact, experiments run by a group of VK2 Amateurs some years ago resulted in the discovery that under weak signal conditions, reception by means of a crystal filter was superior to that when using such a discriminator. The Foster Seely discriminator as mentioned earlier, and even the ratio detector works better on weak signals by adding a limiter.

Discriminators of the type mentioned and numerous other types convert frequency variations to amplitude variations by means of the phase discriminator transformer in which voltages of differing phase are added, the vector sum of the two being applied to a normal diode detector. As the frequency is varied, so the phase angle changes between primary and secondary and the amplitude of primary and secondary voltages in series, when added, results in an amplitude variation in step with the frequency variation.

Still other types use two tuned circuits, one resonant above the centre frequency and one resonant below, so that the relative contribution of amplitude to each diode detector depends on the frequency of the incoming signal relative to the centre frequency. In practically all types, the detector is capable of responding only to amplitude variations, thus the need for a limiting stage ahead of the detector.

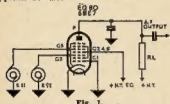
A fairly recent development is a type of f.m. detector which in itself is insensitive to amplitude variations, but very sensitive to phase variations. The device, known as a gated beam discriminator takes two forms. One characterised by a virtual electron gun forming a beam of electrons which is controlled by two gating elements, is the 6BN6, available in U.S.A. The other is the so-called detector developed by Philips. This valve has seven grids and in effect accomplishes the same job as the 6BN6 and in the same manner except that it has no aperture electrode

*21 Sutherland Street, Lane Cove, N.S.W.

to form the electrons into a beam. The type number is EQ80 or 6BE7, and is available in Australia.

GATED BEAM DISCRIMINATOR

The principle of operation of the gated-beam discriminator is quite intriguing and a wordy description is given in Fig. 1. The circuit used with the 6BE7. It will be noted that grids 2, 4 and 6 are connected internally and act as screen grids. Grids 1, 2 and 3 are the control grids, grid 7 is a suppressor. Taking first the triode section formed by the cathode, grid 1 and grid 2, it will be seen that the amount of current passed by this section will be a function of the "plate" or G2, voltage and the bias applied to G1.



G2 also acts to screen the space charge between the cathode and G1 from any potentials appearing on the remaining grids. This is similar to the action in the normal pentode valve where variations in plate voltage are prevented by the screen grid from having any effect on the plate current. Thus the current passed by the first triode section of the 6BE6 is independent of voltages applied to the other electrodes, providing G2 is held at a steady d.c. potential.

Take now the second section which also forms a triode in which the virtual cathode is G2; G3 is the control grid and G4 the plate. Current passed by this section is a function of G4 voltage and the applied bias on G3. The maximum current it may pass is set by the first section, so that this section acts as a cathode having very sharp saturation qualities.

Imagine now a high amplitude sine wave fed to G3. On the negative swing the current flowing to G4 will be cut off whilst on the positive half cycle, current will rise until the maximum amount set by the first triode section is reached. At this point the current will remain constant until the positive half cycle has decayed considerably. The resultant waveform of current will approximate a square half cycle pulse each cycle. This is shown in Fig. 2a.

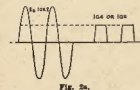


Fig. 2b.

Circuit	A.F. output at 75 Kc. dev.	Suppression of A.M.	Ratio, A.F. volts output to I.F. volts input
Foster Seely with limiter	10v.	12 times	500
Ratio detector	1v.	5 to 10 times	1,400
Detector EQ80	16v.	20 times	14,000

Table 1.—Comparison of F.M. Detectors.

The above table is portion of one appearing in a very interesting article entitled "F.M. Detector Circuits," Part 2, by C. J. Boers, Philips Technical Communications 2/1932. It shows the effectiveness of the EQ80 (6BE7) in terms of sensitivity, a.m. suppression, and voltage output.

Consider now section 3. Here G4 supplies the virtual cathode, G5 is the control grid and G6 and G7 and the plate form what is in effect a pentode. Plate current flow will be a function of G6 voltage and applied bias on G5. More important is that maximum current is set by the amount of current passed by the second section. If the second section is cut off, as it is when the negative half cycle is applied as in Fig. 2a, then no current could pass through section 3, regardless of what voltages appeared on its elements. Thus to study the action of the third section, it is necessary to apply a positive d.c. voltage to G3 in order to hold this section open.

Application of a high amplitude sine wave to G5 will produce a waveform similar to that of Fig. 2a, the third section behaving in the same manner as the second section, so long as section 2 is open. It is thus seen that for current to pass through to the plate of the 6BE7 it is necessary that both G3 and G5 be positive at the same time. These are the two gating elements.

It is also apparent that once the signal applied to grids 3 and 5 has sufficient amplitude to reach saturation and cut off levels, any variations of amplitude will not produce variations in the pulsed plate current. Some slight variation can occur due to variation of the slope of the sides of the waveform, but if the sides are almost vertical, as when the incoming signal is of very large amplitude, then this variation is small enough to be ignored.

Here then is the perfect limiter which will wipe off all amplitude modulation components of a signal, including the noise. Integrating the pulses of plate

current will result in a steady d.c. voltage being developed across the load resistance.

In Fig. 2a, both voltages fed to G3 and G5 are in phase so that both grids are open for a half cycle simultaneously. If the voltage applied to G5 is now made to be out of phase with that applied to G3, plate current can only flow during that fraction of the positive half cycle when both grids are positive. This is shown in Fig. 2b, the shaded portion indicating that period in time during which both grids are open. It will be noted that the width of the plate current pulse is now smaller, i.e. the duration of the pulse is shorter. The integrated d.c. plate current is thus of a lower value, as is the voltage across the load.

If the phase difference between grids 3 and 5 is now made greater, they will be open simultaneously for a shorter period still, with resultant fall in plate current, and in theory, if they are 180 degrees out of phase, then as the two grids are never open at the same time no plate current can flow. By feeding the two grids from a tuned transformer, connecting G3 to the secondary and G5 to the primary, then at resonance the voltages appearing on the two grids will show a phase difference of 90 degrees and the resultant current pulses will be quarter-cycle long and occur once each cycle.

If the frequency of the applied signal is now changed, the phase difference between the grids will change, resulting in a longer or shorter duration of the plate current pulse, depending on which way the frequency shifted. Thus varying the frequency will cause the d.c. plate current to rise and fall in step with the frequency variation as the

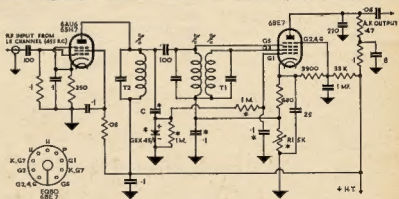


Fig. 3.

T1—I.f. transformer to suit receiver i.f., high selectivity type.

T2--Single tuned circuit from l.f. transformer.
R.f. choke may be substituted if effective.

C—Muting circuit coupling condenser. Two parallel wires about 1 inch long. Adjust for useful range of muting over R1.

Components marked (*) may be omitted if muting is not required. In this case, earth lower ends of both primary and secondary of T1, return G1 to the cathode of the 6BE7, omit R1 and earth the lower end of the 680 ohm cathode resistor.

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pulse width varies. The 6BE7 is therefore ideal for use as a frequency modulation detector as it is quite insensitive to amplitude variations, yet fully sensitive to phase variations produced when a frequency modulated signal is fed to the transformer. It requires no limiter, and does not need any special transformers. The figures given in Table I show that it is superior to both the Foster Seely and Ratio detectors, the voltage output being quite ample to drive a power amplifier. Distortion is very low and best of all, it is very simple to align and stays put. Results are quite astonishing, particularly on weak signals, where the audio stands out clear above the noise, even though the same signal on a.m. is barely copyable. Limiting is effective with signals right down to the noise level amplitude, the silencing effect being very much in evidence on a c.w. signal which requires a b.f.o. to detect using an a.m. detector.

Fig. 3 shows the unit in use at the writer's station. The 6AU6 is usually worthwhile in order to feed a high signal level to the 6BE7 so that it actually limits out noise. It is essential that a high signal level be realised at the 6BE7 grids as it requires at least 8 volts of r.f. before limiting becomes effective. By using the 6AU6 preamplifier, the amount of coupling from the receiver may be reduced to prevent loading on the receiver i.f. channel, yet still maintain sufficient signal for efficient limiting.

The germanium diode is used to provide muting. It applies a positive bias to G1 which is normally sufficiently negative to cut off the plate current of the 6BE7. Once the signal is lost the positive bias disappears and the 6BE7 is cut off, completely silencing the receiver. The effect is quite impressive! R1 controls the signal level at which the 6BE7 is allowed to come into operation and is necessary when searching for extremely weak signals. The diode coupling condenser C should be adjusted to give a useful range over R1. The diode, plus associated components marked by an asterisk, may be omitted if muting is not required, the lower end of the cathode resistor being earthed and the first grid returned to the cathode. In this case, the lower ends of both primary and secondary of the transformer should be earthed.

The plate load of the 6AU6 may be an r.f. choke, or as shown, a tuned circuit. If an r.f. choke is used, it should be effective at the intermediate frequency used.

Once having built the unit, adjustment is very simple. R1 should be set so that no muting occurs and the signal level made as small as possible. This may be accomplished by disconnecting the input coupling to the 6AU6 and merely having the lead from the i.f. channel lying close to the input terminal. Some noise should be heard and this should be peaked by tuning both the primary of the transformer and the tuned circuit in the 6AU6 plate. An output meter may be used if desired.

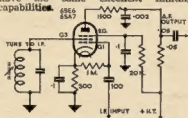
Now reconnect the input to the 6AU6 and with the maximum signal level available from the receiver (a.v.c. off, r.f. gain up) tune in an f.m. signal accurately and align the secondary of the transformer for maximum recovered audio. That's all!

The discriminator may be aligned accurately by use of a v.t.v.m. if desired, the probe being connected to the plate of the 6BE7, but alignment by ear appears to be quite valid.

Limiting action should be checked by tuning a very weak signal, when a large drop in noise level should result. If no decrease takes place, then the signal level fed to the 6BE7 is insufficient and greater amplification should be used ahead of it.

The integrating condenser in the plate circuit also provides de-emphasis and it may require adjustment in capacity to suit a straight f.m. signal. However, the value shown is a good compromise and should give good results on either f.m. or p.m. transmissions.

Fig. 4 shows a substitute circuit which may be used with a 6BE6 pentagrid tube. The results are not to be compared with those of the 6BE7, but it still gives better results than an a.m. detector and tuning on the slope of the selectivity curve. Adjustment of the 6BE6 circuit involves merely tuning the circuit between grid 3 and ground for maximum audio signal when tuned accurately to an f.m. signal. The circuit for the 6BE6 is known as an Induction Detector and works on similar lines to the 6BE7 circuit, though it does not have the same excellent limiting capabilities.



With the discriminator described, and the diode modulator described last month, we conclude the description of the New Look in Frequency Modulation. It is hoped that more attention may be given to n.b.f.m. in the future as it has much to offer in the way of improved reception and in particular, offers a very wide field for Amateur experimental work. Very narrow band f.m. (6 Kc.) has been neglected by the commercial world which appears to be quite unfamiliar with the advantages it offers. Perhaps the Amateurs could once again slip back into their old place and give a lead in developing what appears to be a very worthwhile system.

AWARDS FOR TECHNICAL ARTICLES

The Council of the Victorian Division, W.I.A., have decided to make an annual award of up to £5 available for the best article or articles printed in "Amateur Radio" from July issue to June issue of the following year. The judging to be carried out by the Magazine Committee of "Amateur Radio."

VICTORIAN DIVISION STATE CONVENTION

The Annual State Convention of the Victorian Division of the W.I.A. will be held at Ballarat on the week-end of 27th-28th November, 1954. The Convention will be opened by the President of the Division, Mr. Gordon Dennis, at 8 p.m. This year the South Western Zone are the hosts. Here is the programme:—

Saturday—

Afternoon—Arrival at 3AMH's shack, Walker Street, Ballarat North, where you will receive identification card and your hotel accommodation.

6 p.m.—The Annual Convention Dinner at Craig's Hotel. Cost approx. 7/6 per head.

7.45 p.m.—Opening of the Convention by the President.

The ladies and children will go to the pictures.

11.15 p.m.—Supper accompanied by the ladies.

Sunday—

10 a.m.—Meet at 3AMH's shack, Walker Street, Ballarat North.

10.30 a.m.—Transmitter Hunt on 80 mx for those interested; finish 12 noon.

Visit to the New S.E.C. power house.

A tour of Ballarat and environs per parlour coach (cost 2/- per head) has been arranged for those interested.

12.45 p.m.—Dinner at Craig's Hotel.

2 p.m.—All Visitors adjourn to the Ballarat Botanical Gardens.

A Treasure Hunt for the children.

A Scramble (any band). Each competitor allowed 10 minutes, and only one tx on at one time.

Guessing the frequency of an oscillator (tuned circuit).

Presentation of trophies, etc.

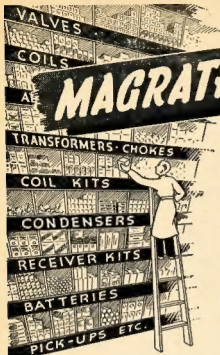
4 p.m.—Afternoon tea.

5 p.m.—Finish of Convention.

Those people who will be arriving on Sunday, are requested to send their QSL card to Bill Sadler, Walker Street, Ballarat North. Upon receipt, he will send you a map of Ballarat and further details. If you wish accommodation for the Saturday night, let him know immediately, and enclose 10/- as deposit and indicate how many will be in your party. This is most important.

During the business of the Convention, the Kinnear Trophy will be presented to the Zone which has won it for this year.

It is expected that there will be an attractive array of portable and mobile gear, both on the lower frequencies and v.h.f. bands. Let us make this 1954 Convention a bumper success.



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THE COMPLETE AMATEUR

PART TWO

BY TOM ATHEY,* VK4UT, A.I.R.E. (Aust.)

SECTION THREE

A Small Efficient Audio Oscillator

This piece of equipment can be regarded almost as a must in the shack, particularly where it is necessary to check the output of your modulator. It permits you to feed a sustained note into the input of the speech amplifier and if sufficient care is made with the design of the audio oscillator, it will ensure that you get a sine wave pattern output from it. You should be able to adjust the clipping of your modulator to satisfactory levels and ensure an output that is clean and free from distortion.

Of course it must be understood that it will not measure noise and distortion in an amplifier. Equipment suitable for

3,000 cycles, thus giving adequate coverage on voice channels used in Amateur Radio.

It is somewhat similar to the well known Wein Bridge type, only it uses fixed condensers instead of variable ones, and relies on a carbon potentiometer for frequency variation. The circuit uses a 12AU7 valve and with a 6X4 rectifier.

It is well to note that the values quoted should be adhered to if possible. The whole unit can be built into a very compact unit that will take very little space on the operating table.

The circuit is simple and straight forward and needs little explanation. The transformer is a small type; the h.t. need not be higher than 180-0-180 volts at 30 ma. and only one filament winding is needed. The dial is a matter of individual choice and need not be a vernier action. One word of caution,

a note, say 50 cycles, and note the wave form. Now with the pattern on the c.r.o. feed your oscillator into the horizontal plates of the c.r.o. and line up the new pattern to match with that from the other oscillator. Do this for all points you require, say, 150, 200, 300, 500, 1,000, 2,000 and 3,000 cycles. This is all you really need for a modulator of your rig.

The amplitude of the regeneration is controlled by the amount of plate voltage fed to the second half of the 12AU7 valve and once set should require little future adjustment.

SECTION FOUR

Newcomers' Introduction to Aerials

Right here and now it must be clearly understood that this article is only a short summary on aerials. The theory of antenna propagation and the associate feeders are a feature that requires the type of explanation given by the W.I.A. Classes. In those Classes, the subject is fully covered by the capable instructors.

Therefore it is proposed to quote only a few of the more common types of aerials together with the general constructional data. To do this fully will require quite a bit of your time. Study which type you prefer to erect and consider what you may expect from your antenna.

First let us summarise what is required from an aerial. It must fit your location. It must be built in accordance with your capital. You must consider the orientation of the lobe patterns to see that you put your signal out where it will do the most good, and it must cover as many bands as possible—that is at first. Later on other aerials can be erected for each band, but at first one that will cover at least two bands is an excellent way to start.

Therefore the newcomer is faced with a choice of a few of the more simple types such as:—

1. The Wyndom, single wire fed.
2. The centre fed Doublet, 600 ohm feeders.
3. The twisted fed Doublet, 72 ohm feeders.
4. The folded Dipole, 300 ohm feeders.

These are the more simple types to start with. However, for those who require details on beam construction, I have included charts dealing with the spacing of elements and the types of feed these aerials require. It is a well known fact that if you can afford a beam antenna you will gain immensely in both reception and transmission. To give you full details on beams is beyond the scope of this article, so without any more ado, here is the summary.

THE WYNDOM AERIAL

This aerial was used very extensively by the Forces during the last war. It is

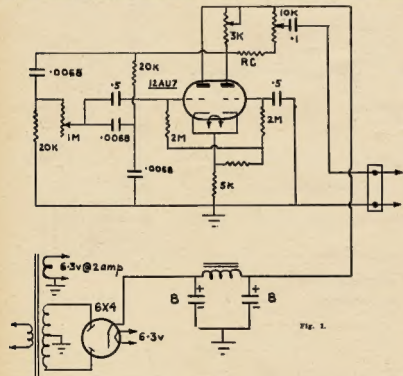


Fig. 1.

a test of this nature is somewhat beyond the scope of this article. However, if it is possible to obtain the use of one (i.e. an N. and D. meter), you may be quite surprised at the distortion present in your rig.

The schematic shown (Fig. 1) will meet most of the requirements of the average Amateur and permit him to build up a small efficient audio oscillator having a frequency range of 150-

use only good types of resistors and condensers.

There are three controls, viz., (1) Frequency control; (2) Amplitude of oscillation; (3) Output control.

CALIBRATION

After allowing a period of time to warm up, say 10 minutes, set about calibrating the oscillator. If you have a c.r.o. the task is easy. If this is possible borrow an audio oscillator from another Amateur and feed to the vertical plates

* Ex-Instructor Q/and Division W.I.A. Classes, 41 Mountford St., New Farm, Brisbane.

LOW HUM, LOW MICROPHONY, A.F. PENTODE on the Noval Base

The Mullard A.F. pentode, EF86, has been especially designed for use in resistance-coupled, audio frequency, voltage amplifier circuits. An essential requirement of such circuits, low hum and low microphony from the amplifying valve, is achieved with the EF86 by careful internal screening, rigid electrode structure and by the use of a bifilar heater.

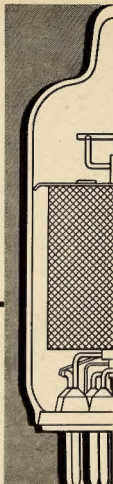
Whilst in normal circuitry the EF86 has the low hum figure of 5 micro-volts referred to the control grid, even this figure can be improved. As the control grid pin of the EF86 is placed equi-distant from its two heater pins, any hum induced from the heater pins may be virtually balanced out by providing the heater winding with an earthed centre-tap. Used in this way, the EF86 has a hum figure of the order of 1.5 micro-volts.



ACTUAL SIZE

EF86

Other important features of this voltage amplifying pentode include high gain, small size and single-ended construction. The EF86 is already widely accepted by Australian engineers—many thousands are in service in tape recorders, amplifying equipment and broadcast stations throughout the Commonwealth.



ME

ABBRIED DATA

HEATER		CHARACTERISTICS		BASE	
Vh	— — — 6.3 V	Va	— — — 250 V	B9A (Noval)	
Ih	— — — 0.2 A	Vg2	— — — 140 V	DIMENSIONS	
CAPACITANCES		Ia	— — — 3 mA		
		Ig2	— — — 0.6 mA		
		Vgl	— — — -2 V		
Cout	— — — 5.5 pF	gm	— — — 1.8 mA/V	Max. seated height	49 mm.
Cin	— — — 4.0 pF	ra	— — — 2.5 MΩ	Max. bulb diameter	22 mm.
Co-gl	— — — 0.025 pF				

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simple to erect, has fairly broad-band characteristics, and only requires one wire to feed it.

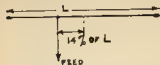


Fig. 2.—Wyndom Aerial.

It consists of a half wave dipole hung horizontally, as shown in Fig. 2, and the feeder is joined at a point $1/4\lambda$ back from the centre of the half wave. Simply join the end to the set and wind up the transmitter. I have used this aerial on a FS8 from Sydney and held reliable communication up to 1,500 miles day and night for months on end, using a frequency between 5 and 7 Mc.

L equals 467.4 divided by the frequency in megacycles. Answer is in feet.

TWISTED FED DOUBLET

This is another half wave dipole, horizontally suspended. The feeder consists of twisted rubber flex. The aerial is split in the centre with an insulator and one leg of the feeder is joined to each portion of the aerial. The other ends are taken either to a coupling link on the transmitter or to the A. and E. terminals on the receiver.

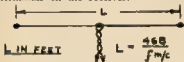


Fig. 3.—Twisted Fed Doublet

The impedance of this antenna is about 72 ohms at the point of junction to the aerial. Incidentally, this type makes a good receiving aerial as it has inherent noise reducing features by virtue of the fact that the feeder cancels out any pickup that it (the feeder) picks up and so reduces the noise.

CENTRE FED DIPOLE

Again we use a half wave dipole, only this time we use a 500 ohm open wire feeder. For the construction of this feeder refer to the Handbook tables as there are many combinations of twin wire that can equal 500 ohms.

The aerial is split in the middle with an insulator of about 4" long. Join the feeders one to each side as shown in Fig. 4.

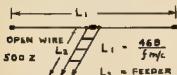


Fig. 4.—Centre Fed Dipole.

This type is perhaps the best aerial to start with. However, as the aerial must be tuned for correct impedance, a word or two will not go amiss. At the transmitter end of the feeders, the impedance varies from 75 to 3,000 ohms, to correctly match this aerial to the transmitter, it will be necessary to use series or parallel condensers (see Table 1).

A point is that if the feeders are reduced to an impedance of 300 ohms, it is possible to tune the aerial as a series fed aerial for all bands.

Its main feature is that it can be used on four bands, say 80, 40, 20 and 10 metres, and the same feeder can be used all the time.

Table 1 shows various combinations of length and the associate feed tuning

Band	L1	L2	Tuning
Mc.	Feet	Feet	
3.5	138	68	Parallel
7.0	138	68	Parallel
14.0	138	68	Parallel
28.0	138	68	Parallel
7.0	68	100	Parallel
14.0	68	100	Parallel
28.0	68	100	Parallel
7.0	68	67	Series
14.0	68	67	Series
28.0	68	67	Series

Table 1.

FOLDED DIPOLE

This aerial consists of two wires kept apart by spacers as per dimensions quoted later in the article. The two wires are joined together at each end and one of the wires are split in the middle and an insulator joined in the opening.

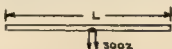


Fig. 5.—Folded Dipole.

The impedance is such that it shows about 300 ohms at the insulator, where you can feed it with 300 ohm ribbon. It can be used either horizontally or vertically, the latter being somewhat more noisier at reception than the former, but the vertical will transmit in all directions at the same time, hence it gives you all round coverage.

It is fairly broad in its tuning, in fact it will handle a band from one end to the other without retuning the feeders. It can also be used for frequencies up to and over 2 metres, which makes it very popular as a v.h.f. antenna.

Calculate the length of the dipole as before, viz.: 468 divided by the frequency equals answer in feet of a half wave aerial.

INVERTED VEE BEAM

One of the most simple beams known is the Inverted Vee. This is an aerial that exhibits definite beam characteristics in so far as the direction of propagation is in one direction only. There has not been much use of it amongst the Amateur fraternity, why I do not know. Its coverage is good. At the specified frequency it is cut for, it shows as much as 8 db gain over a single dipole whilst raising the frequency as much as two times (say 5 to 15 Mc.) it still can be worked and still shows a gain of 2 db over the original dipole.

It only needs one pole and can be set up by one man. From Fig. 6 you can see that it consists of a long wire run up to the top of a pole and then taken down to a terminating resistance

mounted at the end you wish to transmit to. The termination resistance has an impedance equal to the characteristic of the feed line. Constructional details are obvious from the sketch.

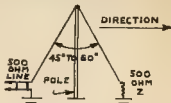


Fig. 6.—Inverted Vee Beam.

It might be of interest to you that it is being used, or has been used; by the chaps down in Antarctica. In an article in a recent issue of "A.M." such evidence stated that the aerial was an Inverted Vee. So if it is good enough for them down in the land of the deep freeze, it should be good enough for us.

STRAIGHT BEAM AERIALS

By this the author means rotary beams mounted on a tower or telegraph pole. First let us consider what we need for a beam. The first consideration is plenty of room. (No chimney pots in the way to be swept off, or such like article.) Next either a tower of about 30 to 40 feet high. The tower can be made of 2" x 2" hardwood, properly spaced and braced. It must be anchored at the base and it must have a "catwalk" or platform to stand on so that you can get up and tune the beam. Alternatively you can put up a pole, a 60 ft. one is ideal. But all this costs money. Besides there is the turning mechanism—a prop, pitch motor will do nicely. All in all quite a fair bit of cash and the new-comer has not always got it, not after building his rig.

For those loaded with the necessary and those who insist on a beam, the following tables will give him a good basis to start with. Mind you, chaps, the author is not against beams, he is all for them. They do improve your DXing and gain you some of those coveted QSLs to paste up on the walls of your shack. It is admitted that the chap with a four element beam has the edge on the one with say a folded vertical, but to gain certificates with the latter type of aerial, gives one a feeling that his rig must be good to get results like that.

The writer hopes you can derive some pleasure out of reading the articles over. He has enjoyed writing them and if they help any "new chum" to Amateur Radio and its genial fellowship, then he shall feel truly rewarded.

DATA FOR FEED MATCHING SYSTEMS

Average Dimensions

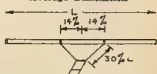


Fig. 7.—Delta Match. Approximate match to air spaced 500 ohm line.

DATA FOR BEAM AERIAL CONSTRUCTION

Antenna Type	Driven Element Length	Reflector Length	Director Length			Spacing between Elements	Approx. Gain db	Rad. Resistance ohms
			1st Direct.	2nd Direct.	3rd Direct.			
2-element with reflector	482 Freq. (Mc.)	490 Freq. (Mc.)		—	—	0.15	5	30
2-element with director	462 Freq. (Mc.)	—	455 Freq. (Mc.)	—	—	0.1	5.5	15
3-element	468 Freq. (Mc.)	500 Freq. (Mc.)	445 Freq. (Mc.)	—	—	Dir. 0.1 Ref. 0.2	7	20
3-element	468 Freq. (Mc.)	485 Freq. (Mc.)	450 Freq. (Mc.)	—	—	0.25 D. & R.	8	50
4-element	468 Freq. (Mc.)	492 Freq. (Mc.)	442 Freq. (Mc.)	438 Freq. (Mc.)	—	0.2	9	13
5-element	468 Freq. (Mc.)	492 Freq. (Mc.)	442 Freq. (Mc.)	438 Freq. (Mc.)	434 Freq. (Mc.)	0.2	10	10

Table 2.—These measurements are only to act as a guide. Slight adjustments may or will have to be made for each individual circumstance.



Fig. 8.—"T" Match. Element and "T" Match equal diameters. 500 ohm twin line.

DATA FOR FOLDED ELEMENT MATCHING SYSTEMS

Method of Calculation

Multiply the Impedance Transformation Ratio given below by the Radiation Resistance on Chart for Beam Aerial Sizes (Table 2).



Fig. 11.—Folded Element Match.

Impedance Transformation Ratio—

$$\begin{aligned} \text{For } D_1 = D_2 & \quad \frac{R. \text{ Feed}}{R. \text{ Resist.}} = 4 \\ \text{For } D_1 = 1" & \quad \frac{R. \text{ Feed}}{R. \text{ Resist.}} = 6.9 \\ D_2 = 0.5" & \quad \frac{R. \text{ Feed}}{R. \text{ Resist.}} = 10.5 \\ S = 1.5" & \\ \text{For } D_1 = 1" & \quad \frac{R. \text{ Feed}}{R. \text{ Resist.}} = 11 \\ D_2 = 0.25" & \quad \frac{R. \text{ Feed}}{R. \text{ Resist.}} = 11 \\ S = 1" & \end{aligned}$$



Fig. 12.

Impedance Transformation Ratio—

$$\begin{aligned} \text{For } D = 1" & \quad \frac{R. \text{ Feed}}{R. \text{ Resist.}} = 11 \\ S = 3" & \\ \text{Wire: 12 gauge} & \end{aligned}$$

$$\begin{aligned} \text{For } D = 1" & \quad \frac{R. \text{ Feed}}{R. \text{ Resist.}} = 14 \\ S = 2" & \\ \text{Wire: 12 gauge} & \\ \text{For } D = 1" & \quad \frac{R. \text{ Feed}}{R. \text{ Resist.}} = 18 \\ S = 1.5" & \\ \text{Wire: 12 gauge} & \\ \text{For } D = 1" & \quad \frac{R. \text{ Feed}}{R. \text{ Resist.}} = 24 \\ S = 1" & \\ \text{Wire: 8 gauge} & \\ \text{For } D = 1" & \quad \frac{R. \text{ Feed}}{R. \text{ Resist.}} = 32 \\ S = 1" & \\ \text{Wire: 12 gauge} & \end{aligned}$$

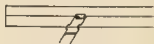


Fig. 13.

Impedance Transformation Ratio—

$$\frac{R. \text{ Feed}}{R. \text{ Resist.}} = 9$$



Fig. 14.

Impedance Transformation Ratio—

$$\frac{R. \text{ Feed}}{R. \text{ Resist.}} = \text{approx. } 25$$

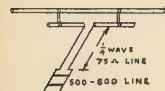


Fig. 9.—"T" Match with Transformer. Same L dimensions as Fig. 8.

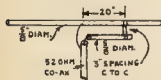


Fig. 10.—Gamma Match.

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supplied with external 3,000 type relay equipped with H.D. contacts ready to mount in the transmitter is ideal for the job.

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NEW OVERTONE OSCILLATOR CIRCUIT

BY J. C. DUNCAN,* VK3VZ

The overtone oscillator is now an accepted method of reaching high frequencies from a low frequency crystal with a minimum of stages, and quite good output can be obtained at the 3rd, 5th and higher odd harmonics of the crystal.

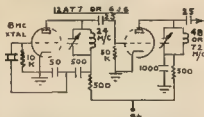
With an 8 Mc. crystal, the triode oscillator actually oscillates at 24 Mc., and if a twin triode is used, the second section can then double to 48 Mc. or triple to 72 Mc. Imagine stages needed with the conventional doubling system to get to 72 Mc., hence the popularity of overtone circuits.

Also with the overtone circuit in converters, we can reach our final crystal controlled frequency with a minimum number of stages, and a further important point is that harmonic radiations from the oscillator will cause spots through the spectrum at 24 Mc. intervals and not 8 Mc. intervals as would occur with conventional crystal oscillators. This helps a lot in converter design in eliminating spurious signals through our v.h.f. bands.

The circuits described in the A.R.R.L. Handbook use either a tapped coil to obtain feedback or a separate regeneration coil.

Regeneration is then adjusted so that as the plate tank condenser is tuned through the 3rd or higher harmonic of

the crystal, the stage regenerates, and listening to the output on a receiver at the harmonic frequency, the note should be crystal and only vary slightly with variations of the tank condenser. If too much regeneration is used, the stage will self oscillate at some settings of the condenser and at others will come under the control of the crystal.



Coupling should be reduced until, as the plate tank capacity is increased, we find firstly, crystal controlled oscillation, but with low output, and then gradually increasing output until the stage suddenly ceases to oscillate; very much like an ordinary crystal oscillator working at its fundamental frequency.

One of the difficulties has been to find a means of making fine adjustments to the feedback coil or tapped coil in the two most used circuits, and when a new circuit appeared in "QST" for September, 1953, most of the v.h.f. fra-

ternity sat up and took notice. Here was a circuit which didn't need tapped coils or feedback windings and depended on the proportion of two condensers for adjustment.

All who have tried this circuit are loud in its praises, not because of greater output, I found this was the same, but its ease of adjustment.

It will be seen that the crystal is brought back to the junction of the 50 and 500 pF. condensers which constitutes the feedback circuit. The 50 pF. value should be changed up or down to achieve output under crystal control only, as explained previously. The tank circuit is tuned to the frequency required. In my case the 50 pF. was increased to 100 pF., but was not very critical and operated correctly with all crystals used. This checks with others who have tried this circuit.

Raising the value of the 50 pF. condenser increases the regeneration. The 12AT7 and 6J6 twin triode work very well with the appropriate plate voltage applied.

If you are having trouble with your overtone oscillator, we can recommend this one. One further thought—with a 7 Mc. crystal, output could be obtained on 21 Mc. in one triode stage for use on that band, in driving the following amplifier tube.

DO NOT FORGET!

The closing date for copy for the January issue is 3rd December

* Technical Editor, 22 Parkside Ave., Balwyn.

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N.S.W. HUNTER BRANCH FIELD DAY

The Hunter Branch Field Day was held at Blackhall's Park on Sunday, 3/10/54, with a total attendance of 70. Present were 13 Amateurs, 4 Associates and their families, including Ernie 2ASE and Chas 2AWQ, who both made the trip from Sydney to be at the Field Day, and their presence was much appreciated by the Branch. The others present were 2FP, 2PQ, 2AFA, 2AOR, 2AHA, 2XT, 2OT, 2KG, 2ARV, 2AUH, 2AGD, 2CS, 2SF, 2ADS, 2XY, 2WU, and Associates: Gordon Sutherland, Dave Elsiey, J. James and B. Bailey.

During the day the children were liberally supplied with ice cream and soft drinks and entertained with films.

The highlight of the Field Day was the Hidden Tx Hunt on 144 Mc. on foot,

blindfolded. Five receivers were available for use and the event was run off in heats. In the first heat, Frank 2AUH found the transmitting dipole in 13 minutes; Ernie 2FP, in the second heat, also logged 13 minutes; Charlie 2ARV, however, was the outright winner, taking only six and three-quarter minutes to find the dipole in the third heat.

The course was a 200 yard stretch studded with obstacles such as trees, cars, and a large tin shed; and the contestants had to make actual contact with the antenna with their body or their receiving apparatus. Each contestant had his group of advisers to prevent him making violent contact with obstacles and to give him misleading and contradictory advice.

After the Hunt had concluded, races were conducted for the children, OM's, and XY's, also competitions such as "Guess the Frequency," won by 2FP; "Pick the Valves," 2AWQ; "Lucky Number," won by Joyce Whyte; "Nail Driving," ladies—Mrs. Swain, gents—2OT. Charlie 2AWV received a 2E26 for winning the Hunt. In the races, J. Gray won the Boys' Race, M. Bailey the Girls' Race, Alhol Greenhalgh the OM Race, and Mrs. Fitton won the Ball Throwing.

Activities closed at 5.30 p.m. and all OM's dashed madly home to see what 20 mx DX had popped up during the VK-ZL Contest.—2AOR.

AMATEUR CALL SIGNS

FOR MONTH OF SEPTEMBER, 1954

ADDITIONS

VK—New South Wales
2DE—D. E. Laing, 16 Rose St., Chippindale.
2GE—M. O. Dalton, 84 Ocean St., Woolahra.
2KJ—K. O. Avery, No. 1 Basic Flying Training School, R.A.A.F. Uranquity.
2LP—L. N. Page, 10 Tuscum St., Potts Point.
2ADO—B. S. McLeod, 23 Stony Creek Rd., Beverly Hills.
2AHT—J. E. Thompson, 23 Light Parade, Bar
2AIF—C. Fletcher, Malling St., Eden.
2ZAG—J. B. Goodman, 28 Boolarong Rd., St. Ives.
2ZAL—C. F. Luck, 28 James Flats, 6 Stanley St., Sydney.

Victoria

30T—G. E. Lewis, 16 Henderson St., West Brunswick.
3VB—Mrs. C. M. Adams, 13 Jelliffe Co. Box Hill South.
3XU—G. G. Weston, 20 Park St., West Brunswick, N.10.
3AAK—C. S. Rann, 2 Georgiana St., Sandringham.
3ZAD—C. R. Bowen, 8 Chatham Rd., Canterbury, E.2.
3ZAK—E. R. Katz, 14 View St., Highgate, S.1.
3ZAM—C. McKellar, "Carramar," May St., Easternview, S.4.

Queensland

4ZAD—D. I. Bates, 150 Lytton Rd., East Brisbane.
4ZAM—L. C. Morrison, Avon Lodge, 171 Riding Rd., Hawthorne, N.E.
South Australia
5GZ—Penfold Amateur Radio Club, C/o. L.R.W. Hotel, Galsbury.
5ZAB—R. O. Henderson, 14 James St., South-west.
5ZAO—E. W. O'Neill, 21 Nelson St., Harcourt Gardens.

Territories

5BS—B. A. Sutherland, Central Avenue, Rabaul, T.N.G.

ALTERATIONS

VK—New South Wales
2DZ—22 Eids Street, Adamstown, Newcastle.
2XU—59 Holburn Street, Croydon.
2AAB—33 Flavelle Street, Leeton.
2ACE—16 Bankala Avenue, Leeton.
2AIL—11 Westgarth Street, O'Connor, A.C.T.
2AII—42 Tindale Road, Artarmon.
2ALI—6 Frenchman's Road, Randwick.
2ALZ—Oriental Hotel, Tumut.
2AGZ—7 Griffith Place, Cambera Ave., Canberra.
2ARD—S.M.A. Camp, Island Bend, via Cooma.
2ARJ—Jean Street, Coffs Harbour.
2AWJ—Range Road, West Pymont Hills.

Western Australia
3NH—"Teasni," Wadga Avenue, Manjerey
3RV—23 Stewart Street, Bantleigh, S.E.14.
3SE—20 York Street West, Balaarat.
3SZ—23 Fagat Avenue, Glenroy, W.9.
3AHZ—70 Moore Street, Traralgon.
2AMU—Station 15 Bowen Street, Hawthorn.
Postal: Flat 6, 11 Loch Street, St. Kilda.
2ANC—Grafton Road, Capetown.
2AWJ—78 Wilson Street, North Carlton.

Queensland

4GN—35 Huzzell Terrace, Green Slopes.
4KCB—Longman St., Cooper's Plains, Brisbane.
4MX—18 Lucy Street, Gaythorne, N.W.5.
4WL—16 Rosedale St., Cooper's Plains, Brisbane.

South Australia

5BU—14 Woodward Street, Blackwood.
5WC—Station Club Rooms, Baringa Street, Woomera; Postal: C/o. Hon. Sec. Post Office, Adelaide.
5WI—6 Holden Street, Hindmarsh.
5WK—26 James Street, Plympton.

Western Australia

6DH—20 Myville Beach Road, Applecross.
6RE—C/o. Wynnes Electrical, Morawa.

Territories

6DS—C/o. Department of Civil Aviation, Wewak, T.N.G.
6WL—C/o. Radio Telecommunications Centre, Rabaul, T.N.G.

DX C.C. LISTING

PHONE			
Call	No. Ctr.	Call	No. Ctr.
VK4HR	12 172	VK4RT	22 124
VK4BS	10 168	VK4VW	11 122
VK4RU	3 164	VK4DO	30 116
VK4FJ	21 164	VK4JP	8 114
VK4SE	10 158	VK4MS	24 109
VK4LD	4 155	VK4C	22 109
VK4KS	9 158	VK4WM	20 109
VK4GW	4 160	VK4HO	25 103
VK4ATN	14 162	VK4DT	11 102
VK4LN	11 141	VK4JH	13 102
VK4AWW	14 140	VK4BP	19 101
VK4JL	12 139	VK4IG	8 122
VK4WF	10 137	VK4GG	18 100
VK4RW	23 125	VK4LC	27 100
VK4SD	6 128	VK4UP	30 100

O.W.

Call	No. Ctr.	Call	No. Ctr.
VK4BZ	6 214	VK4PH	31 134
VK4BS	10 200	VK4VW	11 122
VK4HR	8 195	VK4ST	27 124
VK4FH	15 191	VK4YD	47 123
VK4FJ	21 181	VK4K	8 122
VK4L	9 176	VK4JL	20 118
VK4BY	11 172	VK4PL	38 117
VK4CS	10 168	VK4UM	13 116
VK4RU	3 164	VK4VW	11 122
VK4SE	10 158	VK4C	22 109
VK4ATN	14 162	VK4DT	11 102
VK4LN	11 141	VK4JH	13 102
VK4AWW	14 140	VK4BP	19 101
VK4JL	12 139	VK4IG	8 122
VK4WF	10 137	VK4GG	18 100
VK4RW	23 125	VK4LC	27 100
VK4SD	6 128	VK4UP	30 100

OPEN

Call	No. Ctr.	Call	No. Ctr.
VK4BZ	4 204	VK4LC	27 100
VK4BS	10 200	VK4VW	11 122
VK4FJ	21 200	VK4VW	11 122
VK4RU	6 190	VK4ZB	53 116
VK4SE	10 188	VK4C	22 109
VK4NS	18 195	VK4ZAT	14 113
VK4SG	2 161	VK4HO	25 111
VK4BS	10 172	VK4MS	24 110
VK4GW	13 171	VK4RC	31 110
VK4DI	2 170	VK4ZE	34 110
VK4DZ	15 168	VK4KK	54 109
VK4ZB	10 177	VK4ZC	32 108
VK4KS	24 167	VK4KR	35 107
VK4AWW	45 150	VK4LY	11 106
VK4ZDE	40 150	VK4AWN	30 106
VK4RW	52 145	VK4WT	50 105
VK4LN	52 143	VK4VN	16 104
VK4SF	50 143	VK4UL	27 104
VK4WF	40 141	VK4PT	44 104
VK4HT	41 141	VK4PW	50 104
VK4MC	5 133	VK4HZ	17 103
VK4JP	8 132	VK4KS	31 103
VK4DX	48 137	VK4ZT	37 103
VK4DD	22 130	VK4VS	57 103
VK4ZDE	39 123	VK4TR	31 102
VK4JH	9 128	VK4TY	35 102
VK4AM	20 125	VK4SH	61 101
VK4PM	6 125	VK4CK	6 101
VK4JL	20 119	VK4TO	39 100

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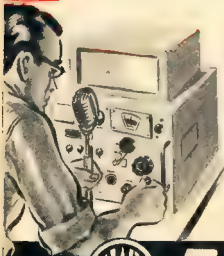
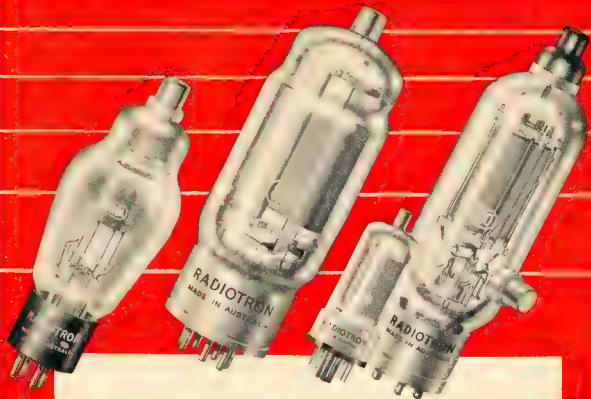
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Page 15

within a few days of one another. GBO is still plagued with severe power leak interference which has been blotting out Sunday morning checks with 6DW at Bruce Rock, it being necessary to revert to 3.5 Mc. I don't suppose even the new crystal controlled converter will improve things, ch. Rol? GEL paid a visit to the "Big Smoke" recently and was immediately poured on by GFB and GBO as a possible contact for 30 or 144 Mc. Seriously though, the spruce 30 Mc. band along with the 144 Mc. band should provide some interesting openings, as 6FM will conform by DCA's v.h.f. results with almost, operating on that route. So what about it, Ernie?

GFB talking about mobile transceivers on 288 Mc., but at present putting out a good signal from his 3 el. beam resurrected from previous activities in Mullerwa. GCU has given away the idea of putting the p.p. 807s on 6 mhz, but that won't reduce the activity I trust. GGB has been quite active once more, despite power supply mishaps aforementioned. GCE has been doing some interesting experiments with two tubes, situated 100-1500 apart. Results so far are very promising, comparing well with a four el. beam, and what is more important, the array is completely automatic. GEG is experimenting with 60 Mc. mobile operation. A 6MS screen mod. with a vibrator supply and quarter wave whip has been supplying the signal for 6 mhz yet he is still "chasing" the par re 6FM's antenna was cut down in print to a mere four over four! It should have been a four over four over four of 50 Mc., and should be in operation very shortly.

144 Mc. Despite the issue of the limited licence only two of the Z calls have appeared on the band in the last 48 hours. GEAZ, GEAZ, GEAZ, hag his 615 working as a power tripler, but was unlucky to strike a faulty 615. I believe a flock of L.A.O.C.P. conditions will be heard very fully again, so maybe that augurs well for a host of new calls to be heard shortly.

6AW pottering about with the 1163, but is planning to press some 6BS into service to improve p.a. efficiency. 6BS not heard of for some time, but should have his 528 going by now for checks with Manningham, distance about 100 miles. 6JT still among the regulars on Sunday evening at 2000, and even 6RU put in an appearance at the same time and place to activity by the appearance of 6AW! A new-old call heard was 6NC out at North Beach with a fine 50 signal at 6HK.

6WS Mc. and Up. Things are very stagnant here though GBO has spoken about trying a grounded grid "high tensionless" doubler to 288/576 using an 6B16 as per "The Wave" magazine. Time alone will tell if this is a success. Saw 6MK's very neat little tx for 288 Mc. recently. It's about time that thing came in for an airing Tom—and at least the b.c. might not be so troublesome.—6HK.

TASMANIA

Interest in v.h.f. continues to increase in Tasmania. TWN at Tarellah now has a cascade converter working and is receiving TMY at Sandford—a distance of 88 miles over rugged country on 144 Mc.; at present TWN is constructing a tx. TAB has also staged a comeback and has a very efficient tx working on this band. The line-up is as follows: 6VQ 6C, 6MS tripler, 6MS doubler, 2230 tripler, 632 buffer and a QEQ26/46 p.a. The input is approx. 80 watts and the antenna is 8 over 8. Doug's frequency is 144.3 Mc. This set-up should provide the Tasmanian end for VKA/VK7 contacts in the near future, being situated right on Bass Strait.

Hobart stations now have an excellent chance of gaining conditions for 144 Mc. DX as the tx now in use on 144 Mc. (Baw 145 Mc.) are being heard consistently in the South.

The Tasmanian stations active for "Operation Centipede" were TLE Launceston, TPF Devonport and TLE Mt. Wellington. Although as yet a.l. reports are not to hand it appears as though the distance to VK3 was too great. Here in Tasmania the Launceston-Hobart link was established through TLE, TPF and TLE. Neither TLE or TPF heard any signals from VK3 and as no schedules had been arranged previously this was considered to be the weak link as we may have been calling when the VK3 beams were in the wrong direction and in any case if any other stations are wanting to test the Tasmanian-Arthur's Seat link at any future date, I would suggest they contact me personally as that schedule can be arranged and Tasmanian stations notified.

Although TLE was not heard by TLE on Mt. Wellington or by TAB at Devonport, TLE heard TAB call TLE at 1510 hours. Although no contact was made, this should be easily rectified in future and this would make an excellent contact, the distance being 125 miles.

It is also expected that several new Tasmanian stations will be operating in the Ross Huli Contest this year.—TLE.

ROSS A. HULL MEMORIAL V.H.F. CONTEST, 1954-55

RULES

1. The Contest will take place in the 50-54 Mc. band and will commence at 0001 hours E.A.S.T. on 1st December, 1954, and will continue until 2359 hours E.A.S.T. 31st January, 1955.

2. Only one contact with any one station per twenty-four hours commencing midnight E.A.S.T. to count as a scoring point.

3. Exchange of a serial number will constitute a contact.

4. The serial number of five or six figures will be made up of the RS (telephony) or RST (telegraphy) report followed by 0001 to 9999. The serial number will be made up of three figures which may commence with any number between 001 and 100 for the first contact and which must increase in value by one for each successive contact, e.g. if the number chosen for the first contact is 050, then the number for the second contact must be 051, for the third 052, and so on. If any contestant reaches 999, then he must start again 001 and continue as above.

5. Scoring.—Ten points for the first contact with any particular station, Interstate or overseas; 9 points for the second contact; 8 points for the third contact, and so on to the 10th contact for 1 point, after which no more scoring contacts with that particular station can be made for the duration of the Contest.

6. Logs shall contain the following information.—

Date, time (E.A.S.T.), call of station contacted, serial number sent, serial number received, points claimed for the contact, and at the foot of each page, total points claimed, and at the end—the grand total.

Logs shall be signed by the competitor, together with a declaration to the effect that the station was operated strictly in accordance with the rules and spirit of the Contest, and the decision of the Federal Contest Committee shall be final and binding.

Logs must be received by the Federal Contest Committee, Box 1234K, G.P.O., Adelaide, South Australia, not later than 1st March, 1955.

7. Entries will be accepted from all States of the Commonwealth and Districts of New Zealand. Check logs from other countries would be appreciated by the Contest Committee.

8. The regulations governing the control of Amateur Radio in each contestant's country must be observed.

9. Awards:—

(a) For the purpose of Awards, Northern Territory will count as a separate call area.

(b) The outright winner of the Contest within the Commonwealth of Australia will receive an appropriately inscribed Certificate and, in addition, if a financial member of the W.I.A., will hold the Ross A. Hull Memorial Trophy for a period

(c) The highest scorer in each call area in Australia and New Zealand will be awarded a Certificate. In addition, the Federal Contest Committee will have the right to make any additional Awards.

10. The decision of the Federal Contest Committee will be final and binding upon all matters pertaining to this Contest.

SPECIAL ISSUES OF "A.R."

In the near future it is proposed to feature Special Issues of "Amateur Radio" for the v.h.f., mobile and other enthusiasts.

The Technical Editor will be pleased to receive such articles so that these Special Issues will be bumper ones.

STOF PRESS

Sth. Australia Wins R.D. Contest

The Federal Contest Committee has finally determined the winner of the Remembrance Day Contest, the result being as follows:—

1st VK5 870.63 points
2nd VK6 848.35 points

They have been unable to determine the order of the other States as they are still awaiting information from N.S.W. and Victoria as to the official number of licensees in their States.

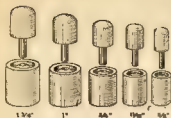
The Committee has been very careful in the checking of logs, because the margin between VK5 and VK6 was quite small—in fact logs from these States were checked twice to ensure that there would be no mistake in their decision.

The complete scores will be available for publication in the December issue with the Committee's comments.

50 Mc. W.A.S.

Call	Certificate Number	Additional Countries
VK3WJ	13	4
VK3PG	5	3
VK3VW	9	3
VK4BY	2	3
VK4ER	3	2
VK5LS	1	1
VK3DW	3	1
VK3RT	6	1
VK3HR	7	1
VK3AEZ	10	1
VK3XA	12	1
VK3GM	13	1
VK3ACL	14	1
VK3ZD	16	1
VK3HO	17	1
VK3ARC	8	—
VK3WH	15	—

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 Bellling & Lee L800 Solid Dielectric 50 ohm Co-axial Cable, 1/11 yd.
 Bellling & Lee L338 Unscreened 72 ohm Twin Line Cable, 16d. yd.
 Bellling & Lee L803 Unscreened 300 ohm Twin Line Cable, 1/3 yd.
 Bellling & Lee L316 Lightning Arrester for Balanced Feeders, 18/9 ea.
 Bellling & Lee L350 Light Arrester for Single Wire Aerials, 15/9 ea.
 Bellling & Lee L1357P and L1358 Plug and Socket for L350 (above) Cable Plug 1/6, Socket 5d.
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FEDERAL, QSL, and DIVISIONAL NOTES

FEDERAL

CHANGES IN FEDERAL EXECUTIVE

A recent amendment to the Federal Constitution has resulted in some change of duties of members.

Mr. George Glaver, VK3AG, who previously held the position of Public Officer, has now become Federal Coordinator of Civil Defense Emergency Networks.

Mr. Max Hall, VK4ZS, is now Public Relations Officer in position previously referred to as Public Officer.

Major Bill Mitchell, VK3UK, has taken over the duties of Public Officer.

If present indications are any criterion, these gentlemen will have quite a busy time in the near future.

In passing, it is pleasant to welcome Major Bill Mitchell back to Federal Executive. All will remember his stirring efforts as Federal Secretary some 4-5 years ago and how he helped in the early development of the Remembrance Day Contest.

MODULATION

The vexed question of reporting modulation quality has, in the past, been subjected to many variations and changes. Recently, I have made an attempt, which appears to have much to commend it.

Proposed RSM Code

The L.A. Union T.A.R.U. Region 1 Conference in Plenary Session adopted a recommendation of its Technical Committee that A-3 transmission should be given quality ratings in terms of the RSM Code, B standing for Readability, S for Signal Strength, and M for Modulation Quality. The committee recommended that all M ratings shall comprise the following five steps:

- M-1—Unintelligible modulation.
- M-2—Defective modulation due to spurious or parasitic oscillations or to causes unknown.
- M-3—Defective modulation due to frequency modulation of the carrier.
- M-4—Defective modulation due to over-modulation.
- M-5—Good modulation, not exceeding 100%.

The International Committee of the Region 1 Division adopted an agreement to give a recommendation of the Division having world-wide interest be made a formal Proposal to Union Modulation and Reception Committee in Region 1, and R.S.O.B. has therefore agreed to sponsor this proposal.

REGION 1 DIVISION

The following summary of the first International Amateur Radio Union (Region 1) Conference, held at Lyons, Switzerland, in May, 1953, has now been submitted through courtesy of the R.S.O.B.

Both the Administrative and Technical Committees drew up a number of recommendations which were later adopted by the Plenary Assembly.

Administrative Committee

1. Issue of a questionnaire to all Region 1 in order to obtain detailed information concerning license conditions.
2. Appointment of permanent Liaison Officers as a contact between the Region 1 Bureau and each National Society.
3. Issue of a standard form of log sheet for recording details of persistent intruders in exclusive Amateur bands.
4. Inauguration of a Region 1 National Field Day.
5. A request to I.A.R.U. Headquarters to approach the Universal Postal Union with a view to reducing the cost of the QSL cards sent in bulk by carried at the "Commercial Paper" rate.
6. Notification of the establishment of Region 1 Amateur Radio Camps.
7. Consideration to be given to the number of International QSL Contests with a view to reducing being affected.
8. The collection of QSL cards by non-members of a National Society.
9. Consideration to be continued to act as the Region 1 Bureau Society.
10. The setting up of an International Region Committee.

11. The establishment of a fund to enable the Bureau to continue to function effectively.
12. The establishment of a fund to enable members of the International Committee to attend meetings of that Committee.
13. The establishment of a fund to enable the Secretary in Region 1 to send a delegation to the next I.T.U. Radio Administrative Conference.
14. Connection with Recommendations 11, 12 and 13, it was agreed that the amounts to be

paid annually by each Society should be based on a percentage of the total number of licenses in force in each country.

TECHNICAL COMMITTEE

1. Avoidance of local contacts on the DX band.
 2. Introduction of the RSM Code.
 3. Recommendations relating to PSK, FM, NRPM, SSB, Remote Control of Models, and Amateur Television.
 4. Recommendations relating to TVI.
 5. Appointment of VHF Officers.
- A Constitution for Region 1 Division has been drawn up by the International Committee consisting of the following Chairman Capt. P. Anders Kjaern, ZLZZZ, Vice-Chairman W. J. Dajinim, PAMDD, Hon. Secretary: Arthur O. Milne, G2MI; Members: John Charlrocks, G3CL, Reg. R. Hamman, G3GJ, Harry Leatt, HB6CA.

FED. CONTEST COMMITTEE

The Contest Committee meets on the last Tuesday of the month and to date has been successful in a dual sense in guiding a number of directions. The meeting this month discussed the R.D. Contest in the light of the logs received, and a general discussion on the methods adopted in checking and the allotting of points. The members co-opted for the purpose of checking have been advised of the decisions of the committee on the methods to be adopted in marking the logs and it is felt that the final result will be satisfactory to all those who took part.

The members who have been checking the logs are Brian SCA, Reg SRR, Jim SFO, Frank SMO, Reg SOR, Reg SJO, Joe SJO, SPM, Reg SQR, Rex SDO, Jack SJD and Gordon SXU, who is the Chairman of the Contest Committee.

It will be seen from this imposing list that we have not lacked helpers and when you list that between them they have had seven meeting nights, two of one hour, four of two hours and all a total of 29 hours on the job, then I think that we owe them a debt of gratitude that cannot be expressed in words alone. Jim and Reg made the checking easier for the boys by putting in a lot of preliminary work and I can say that the boys did not regret that these chaps have done a sterling job for VKA.

The result of the Contest is, at the moment of writing still up in the air. The war of words and votes of count of nights will have to be spent yet before the result is definite. I can say now that whichever State wins, it will be well deserved. The result is so close is the finish, it means that a careful re-check will have to be made of the logs to decide the winner.

I am not going to apologise for the extra time taken to announce the winner, because never before has it been so close as this year. Anyway, enough for now because the Contest Manager will be making his report on the Contest and I don't want to steal his thunder. If I had not seen the logs I would not have believed that it was possible to see so many mistakes on paper as I saw during the checking. I can only say that the Contest is a good thing that were written on the logs, all unintentional, but all making it harder for the checker.

As an example, one contestant had over 100 contacts, yet he only put on paper one contact for each State. It was logs I would not have believed that it was possible to see so many mistakes on paper as I saw during the checking. I can only say that the Contest is a good thing that were written on the logs, all unintentional, but all making it harder for the checker.

By the time this spurge sees the light of day in the magazine you should have seen the rules for the Ross Hull Memorial Contest, and they are submitted as an honest attempt to establish a Contest that will appeal to the majority. We make no excuses for it, in fact if anybody is not satisfied with them, then all we say is, we are sorry, and if you don't want to do that, then pull your head in. If, however, you have any concrete suggestions, send them along to us and we will give them all the consideration they deserve. We are here to do the job and

will appreciate your assistance, but unless you are prepared to give us constructive, and not destructive, criticism, then we are not interested. The boys are not giving up hours of their spare time in attending to us only to be shot at, and I think that you will agree with this outlook. See you in the next Contest!

SFS, on behalf of Fed. Contest Committee

FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

An interesting illustrated brochure, describing the birth and growth of the Australian Flying Doctor Service, accompanies the QSL of VK4CIV, Perth.

To the moment of writing, I have had no response to last month's par requesting the whereabouts of OZ4RI, R. E. Bejon, who was located at Lithgow around 1925-1927. The information is urgently required.

One of the most interesting QSLs ever handed at this Bureau, is one from ZF4AB, located on Fletcher Ice Island, T3 in the Arctic, containing a QSO with Chas. of VK3AC on Macquarie Island. In a letter accompanying the QSL, the writer, ZF4AB, states that he has been in contact as no other place to pole contacts have previously been made. While the Ice Island was near the North Pole, it was located near some visitors in the shape of Russian air-men who flew over several times at a height of fifty feet.

VSDIV, the QSL Manager for Malaysia, is going on leave to the U.K. and the duties will be undertaken by VSDQJ, P. Perouse, and the Bureau address will remain as Box 808, Penang. OM Perouse is ex-ZC3AL. He mentions that many Malaysian Amateurs are commenting on the lack of cards from the Bureau. He mentions he sent 150 to VK and to 22nd September had received only 34 in return. He cites that the percentage of return cards is a very low one. VK does not show up too well in these statistics and comparison. He mentions further that VK3ZC3AL has been servicing the Malay Peninsula for some time. He mentions that he is endeavouring to persuade him to take a trip to Malaya. An invitation is extended by VSDQJ to all VK Amateurs to send QSOs from Malaya to drop in and see him, writing first to J. C. Perouse VSDQJ, Baling Estate, Kuala Ketil, Kedah, Malaysia. He says he will be glad to offer hospitality to any such visitors.

A fair sized package of cards has just been received from the LU Bureau. Practically all of the cards are dated in 1950 and 1951. Just where have they lain during this period?

Geoff Warner, VK6GW, who has been touring in the U.K. for some months, forwarded a bundle of cards for VKA, which had pursued him to London. Geoff popped in a note to say he is returning to VKA in October. He adds that he is well and having a fine holiday and has seen quite a few countries that he could not work.

Fears expressed in a par. last month that the lack of cards would soon put the rest of a job were short lived, as cards trailed during September with DX band operations already ending during early October, plus the VK-ZL.

MY XYL SAYS!

WHY is it that there appears to be so many twins operating an Amateur Station these days?

My XYL says that they must be twins because they say, on the air, "We are using this," and "We are using that," or "We will QSL," in fact it is We, We, We, all the time, yet only one name appears on the QSL card.

My XYL says that she always feels sad for the other half of the twin who never gets a chance to sign his name.

Of course my XYL is ignorant of the finer points of Amateur Radio and can be forgiven, if not silenced!

—OIGLE.

Page 21

WATCH **DECEMBER** ISSUE
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usual entertaining and instructive manner the general methods of cutting and collecting the crystal wafers, etc., and also discussed at length the method adopted in checking the ultimate frequency of the crystal. He covered his subject extensively and with a wealth of detail which was indicated in no uncertain manner by the number and intelligent nature of the questions asked by members at the conclusion of his talk.

Mr. Kemper then took over and gave a very interesting and instructive talk from the viewpoint of insulation of radio parts, and illustrated his talk with a comprehensive collection of radio parts made from the subject of his lecture. He also discussed the job and the questions asked by members at the conclusion of the talk should have amply rewarded the KFO members who were present spent on the preparation of such an interesting subject.

Brian SCA proposed the usual vote of thanks which was enthusiastically received by all present. Among the welcome visitors were D. Markin, 5ADJ; "Mac," SCE; D. Good, A. West, M. Rohlich, A. Wood and C. Cermody. We extend a hearty welcome to these gentlemen and hope to see you again some day.

An interesting member in attendance was Frank SMZ, complete with motor, who had all that went with it, and he was welcomed by the President who said that all present were pleased to see him up and about. He had a splendid job and the questions asked by members at the conclusion of the talk should have amply rewarded the KFO members who were present spent on the preparation of such an interesting subject. The President, more in sorrow than in anger, announced that the members had forgotten to send in their R.D. logs and by this had robbed VKS of a good chance of winning the contest this year, which possibly has its bright future. He felt that the members on the border a certain person would not have hesitated to coin the slogan, "Join the Contest Committee and the R.D. Contest is the Division." However, it was a pity, because from what I have heard, this year was the easiest for us to win, for some as yet unexplained reason.

The question of the annual picnic was brought up and it was decided that it would be held again on the public grounds at Birdwood Oval. The oval and the buses have been booked and whilst you may think that we are little bit greedy in discussing the picnic that will not be held until the end of the year, it mind you that some of us are a little thick in the "recone" and only constant and repeated visits to the "recone" will tell about the matter home. Even then a few will come along after the picnic and say in a meaning voice, "Why didn't you tell about this picnic?" "Things I never heard anything about a picnic." Wouldn't it?

The meeting closed at the wishing time of 11.15 p.m. and members scampered to their last trams homeward to their couch of virtue. Oh, I almost forgot, an apology was acknowledged by the President from none other than that hardworking bundle of energy, Warwick BPS, who regretted his inability to attend the meeting owing to pressure of business, and a pair of golden boots were given to him.

The gentle reader of the VKS notes, and I trust that there is at least one, will have noticed from time to time the name of Ralph W. I have just read in the weekly paper that his name when this name is mentioned, it usually refers to some rise in position, some new job, or something of the kind. I have noticed that the holder of that call sign. Once again I include the name of Ralph in these notes and this time I write with a tinge of envy, because I have just read in the weekly paper that he has been appointed as Inspector of Public Entertainment, he will probably have the job of vetting the City Council's proposals for the new theatre. He will be allowed to be presented to the general public. I suggested to him that my grey hair and venerable appearance, although I could not guarantee that I would be able to make him an ideal assistant to him in his coming ordeal, but his rude gestures, together with his speech, led me to my motives has deeply wounded me.

SOUTH EAST AREAS

STW has had a fairly quiet month and apparently is living on his results in the R.D. Contest, which satisfied Tom that all is working well in his shack. SCT is still trying to finish the building of his shack. He is still in the spare time project, he is finding the going fairly tough. Claude called into the B.B.S. this month and mentioned that he was going to the city. I believe that the trip was a sudden one, he decided to leave during his lunch and was on the road in less than an hour. That's

what you can do when you have plenty of the fifty local—how—well you know what I mean.

SKU has been fairly quiet this month, but rather busy with the coming of the winter weather, the dust will be blown off the glider and Erg will be up in the air instead of on the air. SFD is another one who has had a little more to do with the R.D. Contest, but John is well satisfied with his performance during the Contest, all things being considered. He has had a little more of the modulation transformer "give up the ghost" and is installing another at the moment of writing. I am not a betting man, as normal, but would anybody care for a slight wager as to whether Stuart will be the winner, for the second time in succession, of the VKS division from the R.D. Contest?

SJA never gives me any cause to complain, as a matter of fact I just put the name of John in the carriage of the typewriter and its starts off automatically and types, "Nothing to report this month. I have typewriter, and one day if I am a good boy and don't annoy the W.I.P.s. on the Executive, they are going to have a filing cabinet! What an idea? SJC is on his well earned holidays, that's what he told me, the well earned is his expression, and he hopes to clean up quite a number of the jobs that have accumulated on the desk whilst he was well earning the time to clean them up. Silly isn't it?

Yours and I have and again the average Amateur gets a little tired of his hobby and loses interest for a while, and then he manages to get a hobby which someone who he perhaps hasn't seen for some time, and his contact is finished he finds that all of his enthusiasm has returned, and how! I had a couple of such cases, and I have the R.D. Contest and the nostalgia that they created have made me an enthusiastic member of the Cox mix gang again. I have not heard from the R.D. Contest whom I hadn't heard for several years and the other was with Rupert 7RM (ex-8RM) whom I have not seen since I was a sound protectionist in the city. I have heard from the Electric representative. Both these chaps and I exchanged reminiscences and re-lived the old days. Amateur Radio and the contacts I could not help but think how close the friendships formed on the air by what is now termed, respectfully, "the old-timers." Try and do it.

Now having written that much, it suddenly strikes me, what do we do for those old timers who, like me, have been in the hobby for many years, and that they have only a pension or superannuation to see them through the declining years of their life. It is not necessary to keep up their share in the R.D. Contest? I don't suppose that there are as very many old-timers who have reached that stage as I have. I would like to see loyalty to the W.I.A. by granting them full privileges in the W.I.A. for their remaining years. I have seen a number of old-timers in the magazine would mean to them, for example, and surely the few both that it would cost would be as a drop in the ocean compared to the nature of appreciation and its consequent morale building to the recipient. We have in VKS an unofficial understanding that should a member strike the end-of-the-line, a copy of the "Advertiser" from which he secured the basis for his slanderous statement of a couple of months ago, and that the R.D. Contest will be made at a time and place suitable to his importance!

UPPER MURRAY AREAS

The monthly meeting of the Upper Murray boys was something of a compromise because Hughie SBC and Fred SMA were on holidays, and as a result the meeting was not as large as not available, and that only left Hurtle BRE, Harry SKW and Tom STL. Then Harry found that he was full and only left the other two members for the meeting—reminds me of the whole little nigger boys. The outcome of the meeting was that Tom and his family had a very good time. He was very much enjoying remarks that he could have done with my assistance on the said parties, but I will try to get him to the meeting.

Fred SMA had a pleasant holiday from the care of the world this month, although that statement is something of a misnomer because

his modulator chose this time to have an attack of the measles or vapour or something and if this wouldn't cause worry, what would? Hurtle BRE has recovered from his attack of pneumonia, but is taking things easy. Hughie SBC has been on holidays for some time and is preparing to report. Murray SCF has been absent on holidays in Adelaide and thus can be seen only on the odd day there, so he must still be in the land of the nod.

Tom STL had to miss out on the slow motion session one night this month owing to being indisposed, although the visitation was of short duration. He has been on holidays for some time, his modulator, in fact he describes them as "awful noises" although there are many other things that he has been on holidays for. He is still the rumour that has been spreading through the city, to wit, that he will shortly be transferred from Renmark to Alice Springs. This means that he will no longer be in the vicinity from that area, although I hope that he will continue to send down his usual welcome monthly letter on the doings of the boys at Alice.

This will mean of course that he will have to adopt a new literary style to fit in with the new boys. He will have to be a bit more of a plummy good job. We get too many "plummies" past the compilation department. Anyway Tom, best of luck. He has been on holidays for some time, his modulator, in fact he describes them as "awful noises" although there are many other things that he has been on holidays for. He is still the rumour that has been spreading through the city, to wit, that he will shortly be transferred from Renmark to Alice Springs. This means that he will no longer be in the vicinity from that area, although I hope that he will continue to send down his usual welcome monthly letter on the doings of the boys at Alice.

One of my spies was up at Gawler recently and he reports that Les SAX swears by his 100w. grid dip meter, he reckons that it makes a real difference to his work. He is a bit of a neighbour annoyer. Oh that such wickedness should be. Compton SEP is about to raise the bar. He has been on holidays for some time, his modulator, in fact he describes them as "awful noises" although there are many other things that he has been on holidays for. He is still the rumour that has been spreading through the city, to wit, that he will shortly be transferred from Renmark to Alice Springs. This means that he will no longer be in the vicinity from that area, although I hope that he will continue to send down his usual welcome monthly letter on the doings of the boys at Alice.

My paragraph about my XYL reading the magazine notes before she read mine, in last month's magazine, received a lot of criticism. A criticism from the lady concerned when she read it, which was not improved by Doc SMD reading it, and that was not improved by the fact that I wrote it. It appears that she took exception to my saying that she "lifted me up and kissed me" and that she "arrived home from work." She thought that I was making a statement and said that everybody would think that she was some sort of an Amazon woman or something, being able to lift me up to kiss me. I was a bit finished up all right after I bought her a couple of expensive frocks and hats as a square off, and she was really back and forth on the parcels and saw what was inside, she picked me up and kissed me twice! For heaven's sake, what am I saying. Jeeves, get me my sackcloth and ashes!

WOOMERA RADIO CLUB

The Woomera Radio Club has been having somewhat of a quiet time since their excellent showing in the R.D. Contest and when it is reported that the club is just one year old, and though a number of members have dropped off, the results of that contest will show that the remaining members are certainly as keen today as they were a year ago. Ray SFF apparently well satisfied that he has secured the long coveted call sign is turning in his stinking back and it is rumoured that he will shortly have a new shack at his QTH which will do weird and wonderful things to any piece of unsuspecting timber that he touches. He has no idea that he is busy in knocking up a GRP rig for portable work when he goes away next Xmas.

Len SOC, the ex-President of the Club, ex-had a very good time. He was very much enjoying remarks that he could have done with my assistance on the said parties, but I will try to get him to the meeting. Fred SMA had a pleasant holiday from the care of the world this month, although that statement is something of a misnomer because his modulator chose this time to have an attack of the measles or vapour or something and if this wouldn't cause worry, what would? Hurtle BRE has recovered from his attack of pneumonia, but is taking things easy. Hughie SBC has been on holidays for some time and is preparing to report. Murray SCF has been absent on holidays in Adelaide and thus can be seen only on the odd day there, so he must still be in the land of the nod.

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